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# Annual Report 1977

RIO ALGOM LIMITED





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## Highlights of 1977 Consolidated Operations

(in thousands except  
where noted by asterisk)

|                                                      | 1977       | 1976       |
|------------------------------------------------------|------------|------------|
| Sales .....                                          | \$ 486,587 | \$ 401,611 |
| Net earnings .....                                   | \$ 42,815  | \$ 31,629  |
| Per share of common stock .....                      | \$ 3.12    | \$ 2.29    |
| Dividends paid on common stock .....                 | \$ 14,589  | \$ 13,506  |
| Per share of common stock .....                      | \$ 1.08    | \$ 1.00    |
| Working capital, year end .....                      | \$ 227,859 | \$ 261,302 |
| Ratio of current assets to current liabilities ..... | 3.3 to 1   | 3.9 to 1   |
| Common shareholders' equity .....                    | \$ 338,190 | \$ 310,200 |
| Total common shares outstanding at December 31 ..... | 13,510     | 13,507     |
| Equity per share of common stock outstanding .....   | \$ 25.03   | \$ 22.97   |
| Production (000's)                                   |            |            |
| Uranium oxide (Pounds) .....                         | 5,468      | 5,534      |
| Copper in concentrate (Pounds) .....                 | 141,111    | 145,712    |
| Steel (Tons) .....                                   | 195        | 161        |
| Number of employees at December 31 .....             | 5,922      | 5,544      |

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## Annual Meeting

The Corporation will hold an Annual and General Meeting of Shareholders on Wednesday, April 26, 1978 at 10:00 a.m. (Toronto time), in the Territories Room, Royal York Hotel, 100 Front Street West, Toronto, Ontario, Canada.



# Directors' Report

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## To the Shareholders:

The year 1977 was marked by financial and operating achievements that are important to the Corporation's current position and provide a firm base for its growth and expansion in future years.

## Earnings and Financial Position

Consolidated net earnings were \$42.8 million (\$3.12 per common share) in 1977 compared to \$31.6 million (\$2.29 per common share) in 1976. Dividends paid on common shares were \$14.6 million (\$1.08 per common share) in 1977 and \$13.5 million (\$1.00 per common share) in 1976.

Consolidated revenue in 1977 was \$486.6 million compared to \$401.6 million in the previous year. Earnings before providing for taxes and the interests of minority shareholders of Lornex Mining Corporation Ltd. were \$83.1 million in 1977, an increase of \$14.2 million over the prior year. The major changes compared with 1976 were substantially increased earnings from uranium operations and improved earnings from steel operations partially offset by lower earnings of the Corporation's 67.2% owned Lornex copper-molybdenum mine in British Columbia.

Income and mining taxes provided for 1977 were \$37.7 million, an increase of \$5.8 million over 1976. This tax provision included \$26.1 million in

respect of deferred taxes and at the end of 1977 the net cumulative excess of taxes charged against earnings over taxes paid or currently payable was \$82.5 million. This amount relates mainly to the costs of capital expenditures on major expansion programs which are depreciated for taxation purposes in periods different than for accounting purposes. The cash represented by deferred taxes has been used by Rio Algom to partially finance its uranium expansion programs at Elliot Lake.

Capital expenditures in 1977 were \$95.4 million which included \$68.6 million expended on the Elliot Lake uranium expansion program. At the Lornex copper-molybdenum operation \$18.6 million was invested in the new tailings dam, purchase of new 235 ton capacity trucks and rebuilding the original 120 ton capacity truck fleet, construction of pit services buildings and a new warehouse and for normal equipment replacements. In addition, \$6 million was loaned to Rossing Uranium Limited in which the Corporation has a 10% interest.

Capital expenditures have increased over the past five years from \$9.3 million in 1973 to \$95.4 million in 1977; the total of \$209.4 million expended on capital programs during this period exceeded net earnings by \$9 million. Despite these major expenditures, of which the greater portion was for expansion purposes, the Corporation's consolidated long term debt of \$122 million at the end of 1977 was virtually identical to that at January 1, 1973; while over the same period shareholders' equity had increased by \$158.5 million to \$348.5 million at the end of 1977. Although capital expenditures and additions to long term investments together with the excess of loan repayments and security redemptions over receipts

from housing financing amounted to \$114 million in 1977, the Corporation's cash and short term deposits declined by only \$23 million and totalled \$111 million at the end of the year.

Capital expenditures in 1978 are estimated to exceed \$100 million. It is expected that the large amounts required to complete the capital programs to which the Corporation is committed can be provided from its cash resources without recourse to outside financing except for normal mortgage financing of new housing at Elliot Lake.

## Uranium Operations

Production of 5.5 million pounds of uranium oxide was virtually the same as in 1976; revenue from uranium operations, however, increased to \$132 million from \$93.3 million in the prior year and operating profit increased to \$58.1 million from \$37.3 million in 1976. The increases were due primarily to renegotiation of export contract prices, a significant portion of which related to 1976 production. The grade of ore mined was lower and operating costs were higher in 1977.

## Copper Operations

Revenue of the Lornex copper-molybdenum mine was less than last year primarily because of lower copper prices, the effect of which was modified by higher prices for molybdenum. Earnings were lower because of the lower revenue and because of increased expenses due to



escalation in operating costs and the removal of relatively more waste in the open pit mining operation. Rio Algom's interest in Lornex' net earnings was \$5.2 million (67.2%) for the year 1977 compared to \$10.6 million (66.5%) for 1976. In comparative terms Lornex performed well considering the depressed state of copper markets in 1977.

## **Steel Operations**

Revenue from steel operations increased by almost 25% to \$279.1 million in 1977 and operating profit increased to \$17.7 million from \$7.2 million in 1976. Substantial increases were achieved by both the Atlas Steels specialty and stainless steels manufacturing and the Atlas Alloys metal service centre distribution operations.

In 1977 sales of both the Welland, Ontario and Tracy, Quebec manufacturing plants of Atlas Steels increased compared to the prior year in which sales from the Tracy plant were depressed by a nine week strike and weak markets. Sales of the Atlas Alloys distribution group also increased significantly in 1977.

Earnings for Atlas Steels were higher in 1977 at the Tracy plant because of marked improvements in operating efficiencies and the impact of the strike on 1976 earnings; earnings of the Welland plant were adversely affected by higher than expected costs incurred during the year in bringing the new melt shop on stream. Although

earnings from Atlas Steels improved in 1977 they continue to be less than satisfactory largely because competitive market conditions again did not make it possible to recover unit cost increases. Earnings of Atlas Alloys also increased and, in view of competitive conditions, are considered to be satisfactory for the year. The increase resulted primarily from modest increases in margins in the distribution centre operations and higher volumes together with foreign exchange gains, contrasted to exchange losses that were incurred in the previous year.

## **Exploration**

Exploration expenditures were \$6.4 million during the year, slightly lower than in 1976 due to lower expenditures on the Sage Creek coking coal and Lac Roberge asbestos programs. As announced in July, ore-grade gold intersections were obtained on a property in Newfoundland.

## **Further Information**

Further information regarding the operations and activities of the Corporation is provided in the Review of Operations, Financial and Supplementary Information sections of this Annual Report. For reference purposes maps of Elliot Lake showing the location of the mines and new housing areas that are being developed contiguous to the present town are shown on pages 6 and 7.

## **Uranium Contracts**

At the end of 1977 domestic and export contractual commitments for the delivery of uranium oxide amounted to 80.1 million pounds from the Elliot Lake operations over an extended period; an additional 2.3 million pounds is to be delivered in the United States from the Lisbon mine in Utah by a United States subsidiary.

Government approvals are required in respect of all Canadian uranium export contracts and shipments under approved contracts are additionally subject to annual export permits. Approvals have been obtained for contracts relating to virtually all of the uranium oxide remaining to be delivered under such contracts from Elliot Lake.

With minor exceptions no export permits were obtained by Canadian uranium producers to permit export shipments to be made in 1977. The resulting deferral of shipments related to the Canadian Government safeguards policy and applied to export contracts of all Canadian uranium producers. The Corporation was able to make arrangements whereby payment was received in respect of deliveries that it was not permitted to make to customers in the United Kingdom and Japan and the material was stored in Canada for the account of the purchasers. Consequently, the 1977 earnings and cash flow were not affected by the deferral of shipments.

A safeguards agreement was reached between Canada and the European Economic Community at year end. Early in 1978 a safeguards agreement was concluded between Canada and Japan. Shipments to customers in the United Kingdom and Japan have thus been resumed.

## **Uranium Expansion**

The current program to increase the Corporation's Elliot Lake uranium production capability comprises an increase in the capacity of the presently



operating New Quirke mine and Quirke mill and the development of the closed down Panel mine and mill, together with housing, amenities, and supporting facilities. The Quirke project is nearing completion ahead of schedule and below budget. The Panel project was begun during the year; completion is planned for 1980 and the work is progressing satisfactorily.

These projects when completed will enable the Corporation to fulfill all deliveries to which it is committed through 1992 under present contracts. The annual deliveries to be made from Elliot Lake under these contracts are virtually equal to the planned total annual production of the Quirke and Panel operations in this period. It is believed that further production of uranium oxide from the North Limb of the uranium bearing formations at Elliot Lake may be obtained subsequently by utilizing the Quirke or Panel milling capacity to process ore from the Corporation's closed down Spanish American property located in this same general area. As shown on the map on page 7 this property together with the Quirke, New Quirke and Panel mines and the Quirke and Panel mills comprise the Corporation's uranium holdings on the North Limb.

As stated in the 1976 Annual Report the Corporation's properties on the South Limb of the uranium bearing formations, also shown on the map, include three mines that had been operated and were closed some years

ago. These properties contain substantial uranium deposits which are considered to be commercially recoverable under currently forecasted economic conditions. The timing and method of the development of these properties is basically a function of the market for uranium and the human, physical and capital resources that are available.

Early in January, 1978 it was announced that Preston Mines Limited, an affiliate of Rio Algom, had signed a contract with Ontario Hydro for the delivery to the utility of uranium in concentrate from Preston's currently closed down Stanleigh uranium property on the South Limb. The development and subsequent operation of the Stanleigh property will be carried out on a fee basis by Rio Algom on behalf of Preston. Engineering work on the Stanleigh mine and mill is in progress but neither mine development nor plant reconstruction has begun.

The Corporation's expansion program at Elliot Lake and the development of Preston's Stanleigh mine represent the largest mining expansion project currently being undertaken in Canada. In addition to the mine development, mill expansion and development aspects of the projects, some 1,600 housing units must be constructed over the period 1978 through 1984 to accommodate approximately 2,000 people who will be directly employed. This is apart from additional job opportunities which will be made available and the housing that will be required when the South Limb properties are brought into production. It is noteworthy that these employment forecasts relate only to direct employment although it is normal to consider that several times as many additional people will be employed in related occupations through the multiplier effect. It is significant that, although most of the people to be directly employed at Elliot Lake will live in the town or in the general

vicinity, the important multiplier effect of indirect employment will be of economic benefit over a much wider area in northern and southern Ontario and elsewhere in Canada.

The resources of the Corporation are adequate in every way in relation to the responsibilities that it has assumed. The major concern presently facing the Elliot Lake projects is the potential delay and disruption of construction schedules that could result from the multiplicity of rules and regulations in respect of the environment that are now being formulated by both Federal and Provincial government agencies. They are far reaching in that they relate to the mine and processing facilities and to the housing that will be required for employees.

The commencement of new capital programs will continue to be closely co-ordinated with current programs and with the resolution of environmental matters with government agencies. If these programs can be carried out as now planned the employment opportunities thereby created should help alleviate the effect of employment reductions in the Sudbury mining industry. It is hoped that under these circumstances the various governmental regulatory bodies that are involved will appreciate the need to act promptly to establish clear and reasonable regulations regarding environmental and other factors.



## Other Matters

The legal actions and proceedings, to which Rio Algom Limited and/or Rio Algom Corporation, its wholly-owned United States subsidiary, are parties, are described in note 7 to the consolidated financial statements which appears on page 25.

Rio Algom and its Canadian operations are subject to and have complied with controls over prices, profit margins, compensation and dividends under the Federal Government Anti-Inflation program. Amendments to the Anti-Inflation Act have been introduced by the Federal Government to ensure orderly withdrawal from the controls program; the phased decontrol program will begin on April 14, 1978. If the amendments are enacted it is understood that the Corporation's Canadian operations will be free of price and profit controls by December 31, 1978; employee groups will be freed from compensation controls on dates after April 14, 1978 which depend upon regulations yet to be issued. The restraint on dividends has been extended to October 13, 1978.

## Outlook

The Corporation's major capital expansion programs at Elliot Lake are being undertaken at a time when financial risk is maximized by the excessively high inflation rate in Canada; this can cause cost overruns beyond the control of the Corporation in the case of the projects that are currently in progress. More significantly, however, an excessive rate of inflation makes it necessary to consider with particular care the desirability of undertaking major new

projects that are not required to fulfill current contractual commitments, because control over capital and operating costs and the ability to forecast earnings is impaired substantially. These circumstances together with the currently depressed market conditions for most metals, high taxation and the many regulatory uncertainties imposed upon the mining industry tend to result in the deferral of projects that might normally be undertaken.

Major new productive capital expenditures are probably the most effective single means of achieving the dual objectives of curtailing inflation and increasing employment, and mining is one of the few remaining industries in which Canada remains competitive under world market economy conditions. Under these circumstances it is regrettable that inflation, excessive taxation of the mining industry and the numerous regulatory disincentives imposed by the various levels of Canadian governments discourage productive capital investment in the industry in Canada.

## Directors

Mr. W. A. Arbuckle, who has been a director since 1962, has reached retirement age under the Corporation's policy and accordingly will not present himself for re-election as a director. Mr. F. A. Petito, who has been associated with Rio Algom and its predecessor companies for approximately 20 years and who has been a director since 1961, wished to relinquish some of his outside responsibilities and resigned as a director in October, 1977. Their fellow directors wish to record their appreciation for the distinguished manner in which these gentlemen contributed to the growth and progress of the Corporation over these lengthy periods of time. Mr. D. S. Affleck, who became a director in April, 1977, will also not present himself for re-election as a director.

Mr. R. J. Turner, President and Chief Executive Officer of Genstar Limited, was appointed a director on October 28, 1977. It is intended that Dr. D. S. R. Leighton, Director of The Banff Centre, will be elected to the Board at the Annual and General Meeting on April 26, 1978. You will thus be asked to authorize a decrease in the Board of Directors from fifteen members to fourteen at this meeting.

## Appreciation

Improvements were achieved in all sections of the Corporation's operations during 1977 although in some cases earnings were adversely affected by generally depressed economic conditions. The Directors wish to record their appreciation of the loyal and diligent efforts of the management and employees of Rio Algom and associated companies which have made this possible.

On behalf of the Board

R. D. ARMSTRONG  
Chairman and Chief  
Executive Officer

G. R. ALBINO  
President and Chief  
Operating Officer

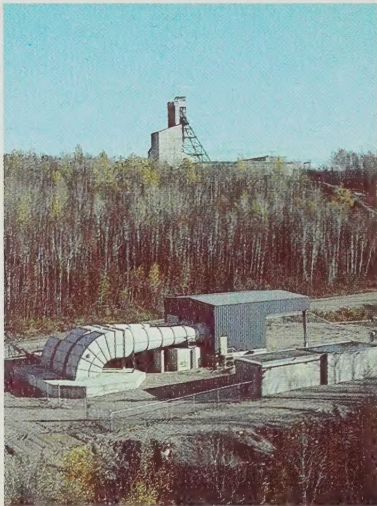
Toronto, Canada  
February 24, 1978



Quirke mill is being expanded to 7,000-tons-of-ore-per-day capacity.



One of the settling tanks at left is readied for operation.



Ventilation plant with New Quirke mine headframe in background.



Some of the miles of new pipe installed in the expansion.

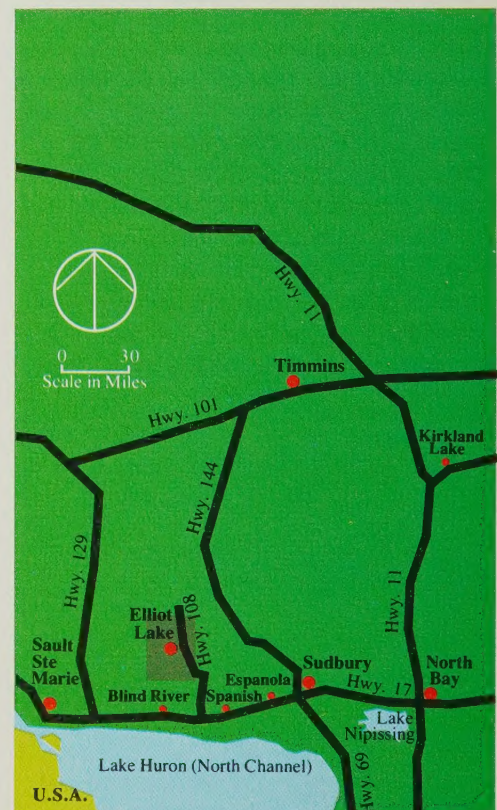


New ore cars wait to go into service underground at the New Quirke mine.

## Review of Operations

### MINING

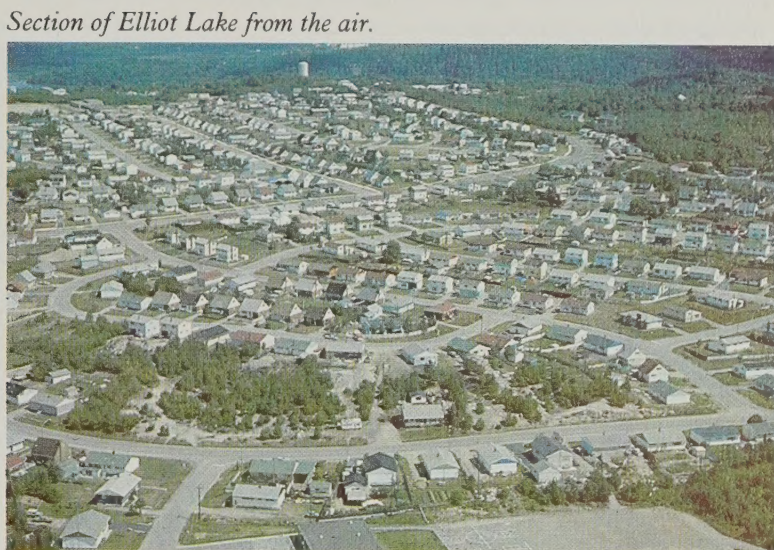
Operating profit from mining operations before exploration, corporate expenses and interest (net) and before providing for income and mining taxes and minority interests were \$77,388,000 in 1977 compared to \$72,176,000 in 1976. Revenue from mine production was \$207,457,000 compared to \$176,266,000 in the previous year.







Electrical power lines are hooked up in Rio Algom subdivision.



A detached three-bedroom house nearing completion.



## URANIUM

Comparative milling, metallurgical, production and shipping data from uranium operations for the years 1977 and 1976 are as follows:

|                                                     | Elliot Lake |       | Lisbon |       |
|-----------------------------------------------------|-------------|-------|--------|-------|
|                                                     | 1977        | 1976  | 1977   | 1976  |
| Tons of ore milled (thousands) .....                | 1,676       | 1,562 | 272    | 267   |
| Average tons milled per day .....                   | 4,774       | 4,574 | 749    | 734   |
| Average recovered grade per ton (lbs.) .....        | 2.6         | 2.8   | 4.2    | 3.9   |
| Average mill recovery .....                         | 94.1%       | 94.2% | 94.4%  | 92.6% |
| Pounds of uranium oxide produced (thousands) .....  | 4,326       | 4,483 | 1,142  | 1,051 |
| Pounds of uranium oxide delivered (thousands) ..... | 5,295       | 5,300 | 1,100  | 1,000 |



*Elliot Lake youngster takes time out from the fray in hockey arena to tighten his laces.*



*Horseback riding is one of the many outdoor sports in which Elliot Lakers are able to participate.*



*A swimming class gets under way in the community's large indoor pool.*



*Children work off excess energy on school playing fields during recess.*

## Elliot Lake

In 1977, as in the prior year, all production at the Elliot Lake operations was from the New Quirke mine and the Quirke mill. The total tonnage of ore milled and the average tons milled per day were both higher than in the previous year despite a continued shortage of experienced miners, somewhat alleviated by employment of mining contractors.

Operating costs were under close control during the year but again rose substantially because of continued escalation in the cost of energy,

operating supplies, wages and benefits. Because of these factors, coupled with a further decline in the grade of ore milled, there was a further significant increase in unit operating costs during the year.

The first phase of the expansion program initiated in 1975 was to increase the production capacity of the Quirke mill from 4,500 to 7,000 tons of ore per day and to provide the additional ore from the expansion of the New Quirke mine workings. The project is scheduled for completion in 1978 with design mill capacity to be achieved in the third quarter. It is expected that this undertaking will be completed on time and below the original estimated cost.

The second phase of the expansion program, first announced in October, 1976, is to develop the Panel mine and

mill to bring it into production with a capacity of 3,300 tons of ore per day. This project is in its early stages and is proceeding satisfactorily.

To provide essential accommodation for about 1,200 additional employees required for the Quirke and Panel operations the housing expansion program initiated in 1975 was continued. The programs to the end of 1977 were for 707 housing units and construction of an additional 314 units is planned in 1978. The housing units include detached and semi-detached



*The Panel property which is being developed for production by 1980.*



*A new stack is hoisted into place at the Panel boiler house.*



*Installation of pipe system that will carry uranium ore slurry from Panel mine to mill.*



*Stanleigh mine will be developed to fill Preston Mines Limited contract with Ontario Hydro.*



*Lisbon uranium mine, located in southeast Utah, has been in operation since 1972.*

dwelling, townhouses and apartments. Where necessary basement ventilation is being installed to keep radiation down to acceptable levels.

The courses established in 1973 to qualify trainees as miners and tradesmen were again expanded in 1977 and will be further expanded in 1978 and subsequent years. Every reasonable effort is being made to provide working conditions which meet the guidelines and regulations in

respect of the working environment that are in force or that are now being formulated by both Federal and Provincial government agencies.

The Ontario Environmental Assessment Board has been authorized and directed to hold hearings regarding the effect on the environment of the planned expansion of uranium mining and milling operations in the Elliot Lake area. Interim hearings in respect of current operations were held in April and May, 1977. A detailed environmental study is being prepared in relation to the expanded operations of the Corporation and is expected to be submitted to the Board in the near future. Further hearings are expected to be held soon thereafter.

## **Lisbon Mine**

The tonnage of ore milled and the average tons milled per day increased over the previous year and exceeded the design capacity of the mill. The mill head grade of ore was slightly higher than in 1976. Average mill recovery was the highest yet attained. Unit operating costs increased only slightly because of strict cost controls, improvement in operating efficiencies and a lower rate of escalation of the cost of materials and supplies.

On September 1, 1977 a five year Source Material License was issued by the United States Nuclear Regulatory Commission, an agency of the United States Government, replacing the provisional source material license under which operations had previously been conducted.



*Lornex, Canada's largest base metals mine, turned in a good performance in a depressed copper market.*



*Mechanics are dwarfed by truck tires.*



*235-ton-capacity truck hauls ore from the Lornex open pit to primary crusher.*



*Youngsters frolic in pond at Logan Lake, where most Lornex employees reside.*

## COPPER

The results of operations of the copper-molybdenum mine in British Columbia, and the financial position of Lornex Mining Corporation Ltd., which was 67.2% owned by Rio Algom at year end, are included with those of Rio Algom on a fully consolidated basis.

Net revenue from production decreased to \$75.4 million from \$82.9 million in 1976 primarily because of lower copper prices, the effect of which was modified somewhat by higher prices for molybdenum. The gross copper revenue price per payable

pound for 1977 averaged 60 cents as compared to 65 cents in the previous year. The costs of operating materials continued to escalate. The total quantity of ore milled was virtually unchanged compared to the previous year but in the normal course of pit development the ratio of waste material handled to ore mined increased by about 32%. Despite increased stripping, the number of employees was maintained at about the same level as in 1976. The increase in amortization and depreciation charged in 1977 is mainly related to the new pit equipment which has been purchased since September, 1976. Negotiations with the Japanese buyers of copper concentrates were concluded in August, 1977 and agreement was reached whereby refining charges were increased for the period April 1, 1977 to March 31, 1979.

Net capital expenditures in 1977 were \$18.6 million for the new tailings dam, purchase of new 235 ton capacity trucks and rebuilding the original 120 ton capacity truck fleet, construction of pit services buildings and a new warehouse and for normal equipment replacements. It is expected that capital expenditures for 1978 and immediately succeeding years will be significantly lower than the expenditures of \$18.6 million in 1977 and \$17.1 million in 1976.





*Giant operations require giant equipment.*

Comparative milling, metallurgical, production and shipping data of the Lornex operation in 1977 and 1976 are as follows:

|                                                              | 1977    | 1976    |
|--------------------------------------------------------------|---------|---------|
| Tons of ore milled (thousands) .....                         | 17,065  | 17,016  |
| Average tons milled per operating day .....                  | 46,753  | 46,877  |
| Average mill head grade                                      |         |         |
| — copper .....                                               | 0.481%  | 0.511%  |
| — molybdenum .....                                           | 0.015%  | 0.016%  |
| Average mill recovery                                        |         |         |
| — copper .....                                               | 88.9%   | 86.7%   |
| — molybdenum .....                                           | 72.2%   | 69.7%   |
| Pounds of payable metal in concentrate produced (thousands)  |         |         |
| — copper .....                                               | 141,111 | 145,712 |
| — molybdenum .....                                           | 3,795   | 3,769   |
| Pounds of payable metal in concentrate delivered (thousands) |         |         |
| — copper .....                                               | 153,792 | 144,301 |
| — molybdenum .....                                           | 4,071   | 3,782   |

The comparative operating results and the financial position of Lornex as an entity are summarized as follows:

| <b>Results of Operations (\$000's):</b>                   | 1977            | 1976            |
|-----------------------------------------------------------|-----------------|-----------------|
| Net revenue from production .....                         | \$75,449        | \$82,940        |
| Operating expenses .....                                  | 47,352          | 40,485          |
| Amortization and depreciation .....                       | 9,072           | 8,002           |
|                                                           | <u>56,424</u>   | <u>48,487</u>   |
| Earnings before interest and taxes .                      | 19,025          | 34,453          |
| Interest costs (net of investment and other income) ..... | 3,644           | 4,487           |
| Earnings before taxes .....                               | 15,381          | 29,966          |
| Income and mineral resource taxes                         | 7,600           | 14,063          |
| Net earnings for year .....                               | <u>\$ 7,781</u> | <u>\$15,903</u> |
| Minority shareholders' interests in above earnings .....  | <u>\$ 2,552</u> | <u>\$ 5,327</u> |

#### **Summary of Financial Position (\$000's):**

|                                                      |                 |                 |
|------------------------------------------------------|-----------------|-----------------|
| Cash and short term deposits .....                   | \$11,216        | \$19,825        |
| Receivables and inventories .....                    | 37,432          | 39,967          |
| Current assets .....                                 | 48,648          | 59,792          |
| Current liabilities .....                            | 22,439          | 25,301          |
| Working capital .....                                | 26,209          | 34,491          |
| Fixed and other assets (net) .....                   | 147,162         | 137,650         |
| Total assets less current liabilities .              | <u>173,371</u>  | <u>172,141</u>  |
| Deduct:                                              |                 |                 |
| Long term debt .....                                 | 48,851          | 62,263          |
| Deferred income and mineral resource taxes .....     | 35,326          | 28,535          |
|                                                      | <u>84,177</u>   | <u>90,798</u>   |
| Net assets .....                                     | <u>\$89,194</u> | <u>\$81,343</u> |
| Minority shareholders' interests in net assets ..... | <u>\$29,256</u> | <u>\$27,250</u> |

*A copy of the Lornex Annual Report for 1977, including the complete financial statements and notes thereto, will be provided upon request.*



*Drill cores are examined by project geologist Bob Hewton at Gayna River prospect.*



*Equipment is delivered by helicopter at the Gayna River prospect in the Northwest Territories.*



*Later in Vancouver office, Hewton discusses Gayna program with RioCanex regional manager Colin Spence, using model of the property.*

## Exploration

Exploration expenditures by Rio Algom and its subsidiaries, including expenditures on the Sage Creek coking coal and Lac Roberge asbestos properties, were \$6,391,000 compared with \$6,827,000 in 1976. In addition to aggressive exploration programs carried out by the Corporation and its subsidiaries, independent exploration groups were retained to conduct programs in Canada and the United States. The Corporation was also responsive to submissions of potential prospects in other countries.

Further drilling on a copper property in the Chibougamau area of Quebec indicated 616,000 tons grading 2.8% copper in a shallow, flatly-dipping 9 foot thick quartz vein zone still open to the northeast. Drilling in 1977 on a copper-zinc property in the

Chibougamau area first drilled in 1976 which is held by a joint venture (33⅓% Rio Algom) indicated 747,000 tons grading 0.55% copper and 6.91% zinc with minor gold and silver values in a volcanogenic deposit still potentially open in a faulted extension. Both deposits are of current economic interest because of their proximity to available milling capacity in the established Chibougamau mining camp. Both deposits will be further drilled in 1978.

In southwestern Newfoundland several gold-bearing zones were discovered consisting of fine-grained free gold and base metal sulphides contained in southerly dipping quartz veins hosted mainly by chloritic schist. The Corporation's interest in this venture is 80% subject to a production royalty. Best results to date were obtained from one zone in which indicated tonnage to a 500 foot vertical

depth exceeds 200,000 tons grading 0.30 ounces of gold and 0.74 ounces of silver per ton, 0.23% copper, 1.57% lead and 1.13% zinc, with the zone still open at depth below the best hole drilled to date. Further geophysical surveying and drilling will be done in 1978.

In the Northwest Territories further drilling was carried out on the 75 square mile Mississippi Valley-type Gayna River zinc-lead property, located 110 miles west of Norman Wells, primarily to test the habit of the mineralization. Seven of thirty mineralized locales revealed by the 1976 drilling were drilled at 200 foot centres. The mineralization was shown to be of manto-type and in mineable configurations. The drilling to date on the property has indicated that the property has potential for large





*Gayna exploration camp nestles between the Mackenzie Mountains and the Gayna River.*

tonnages of 6-8% combined zinc-lead mineralization, but economic considerations dictate the need to discover one or more high grade deposits which the nature of the mineralization that has been identified suggests may be present on the property. Drilling will be suspended in 1978 while a concerted geological, geophysical and geochemical program is carried out to identify targets to be drilled in search of such high grade deposits in subsequent years.

Follow-up work in 1978 is warranted for several base metal prospects in Ontario, British Columbia, Yukon and the United States, a fluorite prospect in British Columbia, and several uranium prospects in the western United States. A joint venture in Newfoundland will be continued.

Work on the Sage Creek coking coal property located in southeastern British Columbia included additional



drilling, environmental studies and technical and economic evaluations. Studies on the feasibility of an operation at alternative rates of annual production were continued. However, new markets for metallurgical coal at present are very poor.

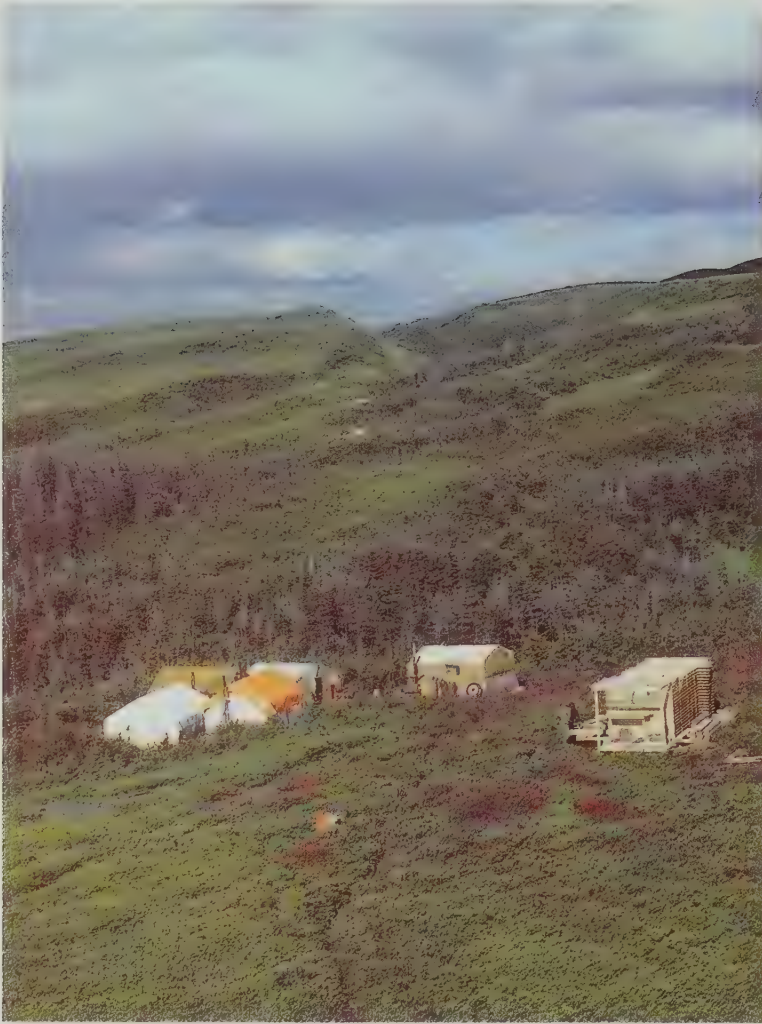
An economic evaluation of the Lac Roberge asbestos property in the Chibougamau area of Quebec indicated that the property was not economically attractive for the Corporation to develop under current conditions. Work has thus been suspended.

### **Employee Relations**

At December 31, 1977 there were 2,581 employees engaged in mining operations of whom 1,866 were engaged in production, 670 engaged in executive, technical, administrative or clerical functions and 45 engaged in exploration activities.



*Howard Hall, eastern regional manager, and geologist Vio Paltser (left), study model of the Cape Ray project.*



*Exploration camp on the Cape Ray property in Newfoundland where the Corporation obtained ore-grade gold intersections.*



*Geologist Bill Boehm logs drill cores.*

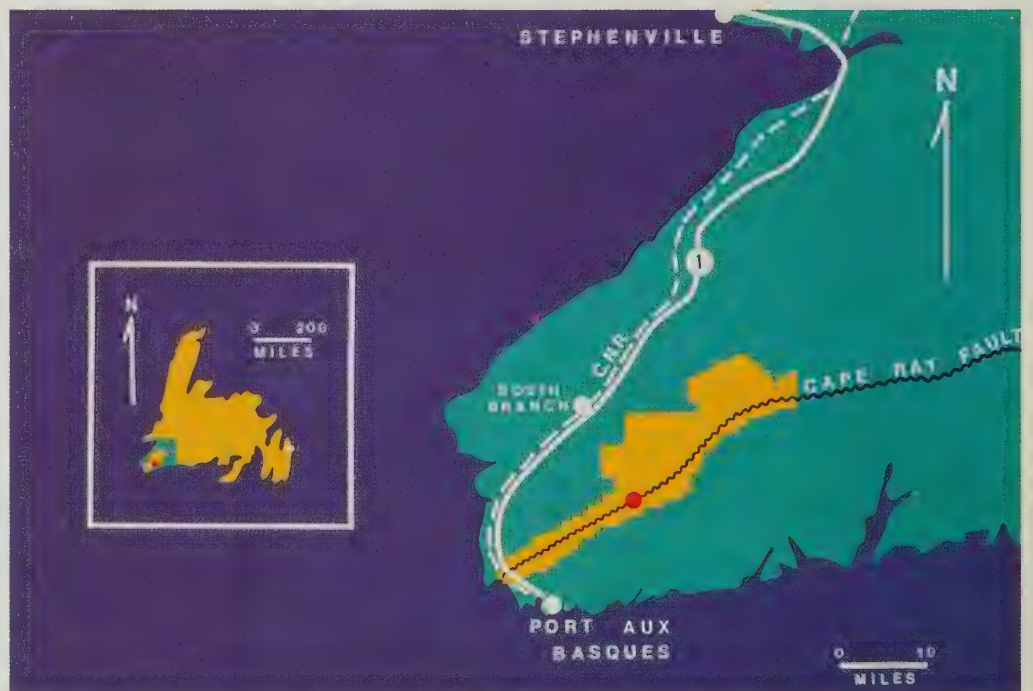


*Picturesque gulch where gold was first spotted.*

In the Elliot Lake area a collective agreement with the production and maintenance employees is in effect until October 15, 1978. Agreements with the office and technical employees and the operating engineers are in effect until November 30, 1978 and October 15, 1978, respectively. At the Lornex mine, agreements with the production and maintenance employees and the office and technical employees are in effect until June 30, 1978.

The agreement with the production and maintenance employees at the Lisbon mine is in effect until February 28, 1979.

Labor relations are considered to be good with no unusual difficulties other than brief work stoppages at Lornex and in the Elliot Lake area.







*In the continuing effort to discover new orebodies, exploration crews investigated over 100 prospects in Canada and the United States in 1977. The camera recorded some of these activities in all kinds of climatic conditions.*







*60-ton electric arc melting furnace went into operation at Atlas Steels' new \$26 million meltshop in Welland, Ontario, in 1977.*

## STEEL

Operating profits from specialty and stainless steels operations before corporate expenses and interest (net) and before income taxes were \$17,733,000 in 1977 compared to \$7,192,000 in 1976. Total sales, including metal products purchased from others by the Atlas Alloys metal service centre distribution group for resale, amounted to \$279,130,000 in 1977, compared to \$225,345,000 in the previous year, in which sales were affected by a nine week strike at the Tracy plant.

## ATLAS STEELS

### Marketing and Distribution

Depressed market conditions in Canada continued in both the capital spending and construction sectors and therefore sales of high alloy steels reflected only modest gains. However, sales of low alloy and stainless steels to the automotive-related end users were at relatively high levels due to the continuing strong demand for North American produced automobiles and trucks.

Export markets were reasonably strong in the earlier part of 1977 but began to deteriorate seriously at mid-year and no improvement is apparent in the first quarter of 1978. The one exception to this export down-turn is in the United States where market conditions improved during 1977. The weaker Canadian dollar has made the United States market more attractive and a

program is under way to increase the sales of non-quota products to this market.

The Canadian Anti-Dumping Tribunal returned a favorable decision in mid-January, 1978 on the dumping of stainless sheet from Japan and West Germany and on the dumping of stainless plate from Japan and South Africa. The dumping duties imposed in mid-October, 1977 will continue to apply on these products imported from the countries involved.



*Atlas Steels' mile-long plant in Welland, Ontario. New \$26-million melt shop is in right foreground with 10-storey air pollution control building to left.*



*Molten steel is poured into ingot mold. After cooling, ingots continue through plant for further processing.*



*Coils of 48-inch wide stainless sheet in Atlas Steels' plant in Tracy, Quebec. The steel is destined for both domestic and foreign markets.*

There is a high degree of uncertainty concerning the specific regulations and probable impact on Atlas Steels of the recently announced United States trigger price program and the European Economic Community minimum import price program. These programs are clearly protectionist in nature and complicate the world trade picture for steel. There is concern regarding the possible diversion of steel to the Canadian market because of the United States and European programs and, in response to these protectionist moves, the Canadian government is understood to be considering the establishment of its own surveillance program.

### **Manufacturing**

Welland plant production was slightly higher than the previous year. However, manufacturing costs, particularly energy, labor and supplies, continued to escalate and were considerably in excess of amounts that could be recovered through price increases in the competitive market situation that prevailed. Start-up costs of the new melt shop were higher than had been anticipated and reduced Welland plant earnings.

At the Tracy plant, productivity records were established in the melt shop. This, combined with improved product yields, resulted in a significant reduction in operating costs and higher earnings compared to the previous year.

The construction of the new melt shop at the Welland plant was completed in 1977 with all melting transferred to the

new shop in mid-June. This facility consists of two 60-ton and one 25-ton electric arc furnaces, together with a vacuum refining system for specialty and stainless steels. All effluents from the melting operation are evacuated through an air filtration system, installed in 1976, so that emissions from the new shop meet statutory requirements for air cleanliness.

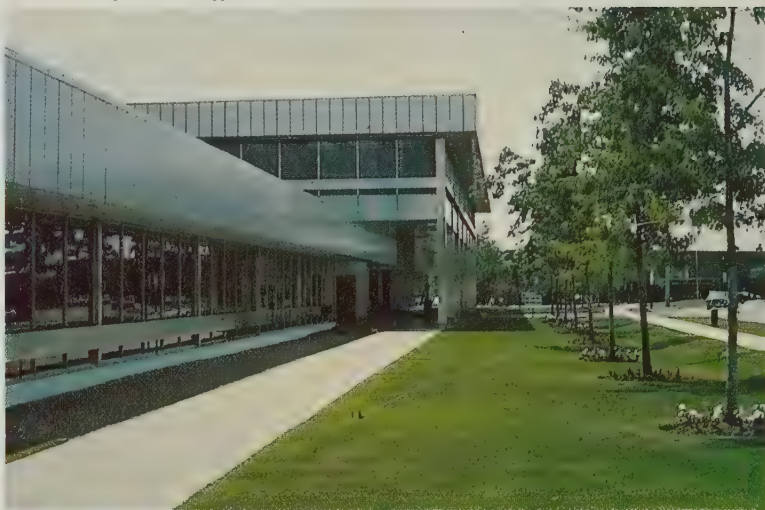
A water pollution control system for the Welland south plant mills was operational in March, 1977 and has proven highly successful. A second and much larger phase of this program to cover the remainder of the Welland plant is to commence in 1978 for completion in 1980.



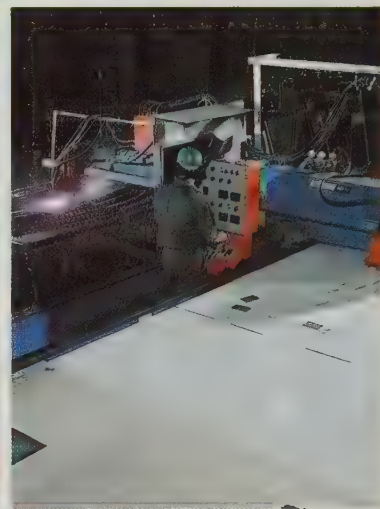
*Atlas Alloys operator fills order for extruded aluminum. Electrically-operated sideloader permits him to move both horizontally and vertically to obtain material from racks.*



*Atlas Alloys' head office, Toronto.*



*Computer provides instant report on stock status.*



*Ultra-high temperature "plasma torch" cuts heavy plate.*

## ATLAS ALLOYS

Sales of the Atlas Alloys metal service centre distribution group in 1977 were substantially higher than in the previous year despite continued relatively low levels of business activity in most markets.

In Canada, higher volumes as compared to 1976 were achieved in virtually all product groups and at all locations. Sales of products related to capital expenditure programs continued to reflect the sluggish level of activity in this sector. The caution of customers is evidenced by the continued large number of small orders with little indication of inventory accumulation.

Sales by the United States company reached record levels. Cleveland and Detroit service centres, as well as the

tool steel distribution centre located in Chicago, acquired in 1976, made significant contributions to the increase that was achieved.

In Australia, sales volume increased substantially under less than buoyant market conditions. All locations, including the wire drawing facility at Melbourne, operated at improved levels. Strengthening of the Australian dollar also improved profits as compared with a foreign exchange loss in the previous year.

The Mexican operation responded favorably from the effects of business uncertainties resulting from the devaluation of the peso, while the United Kingdom operation experienced difficulties related to complex conditions in that market.

## Employee Relations

At December 31, 1977 there were 3,186 employees engaged in steel operations of whom 1,896 were engaged in production, 792 in sales and marketing and 498 in executive, administrative and clerical functions. There were no work stoppages during the year and it is considered that relations with steel operation employees continued to be good.

At the Welland plant the agreements for the production and maintenance employees are in effect until February 16, 1979 and for the office and technical employees until August 31, 1979. Agreements at the Tracy plant are in effect for the production and maintenance employees until November 30, 1978 and for office and technical employees until January 31, 1979.



# Accounting Policies

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The principal accounting policies followed by Rio Algom Limited and its subsidiaries are summarized hereunder to facilitate a comprehensive review of the financial statements contained in this report.

## BASIS OF CONSOLIDATION

The consolidated financial statements include the accounts of all significant subsidiary corporations.

The accounts in foreign currencies are stated in Canadian dollars on the following basis:

Current assets and current liabilities at year-end exchange rates; all other assets and any related depreciation and long-term liabilities at rates in effect at time of transactions; and revenues and expenses (other than depreciation) at average rates for the year.

## VALUATION OF INVENTORIES AND CONCENTRATES AWAITING SHIPMENT

Inventories of steel, other metals, raw materials and supplies are valued at the lower of cost and market. Cost is determined generally at average or standard costs which approximate actual. Market for steel and other metals is net realizable value and for raw materials and supplies is replacement cost. Intercompany profits have been excluded from these inventories.

Concentrates awaiting shipment are valued at estimated realizable metal prices.

## DEPRECIATION AND AMORTIZATION

The following accounting policies are being followed in connection with the depreciation charges of the Corporation:

### (i) Mining fixed assets:

Depreciation is being provided on fixed assets on the basis of the shorter of physical life or economic life, as estimated for the individual mining units, the economic life to be adjusted from time to time as conditions warrant.

### (ii) Steel fixed assets:

Fixed assets are being depreciated on the straight line

method based on engineering estimates of the lives of the assets at the following rates:

|                     |                             |
|---------------------|-----------------------------|
| Buildings           | 4% per annum                |
| Plant and equipment | 6 $\frac{2}{3}$ % per annum |

Mining properties and preproduction expenditures are being amortized on the same basis as depreciation is provided on mining fixed assets.

Excess of acquisition cost over adjusted book value of Atlas Steels assets is being amortized on a straight line basis over the period ending in 1982.

Debenture discount and financing expenses are being amortized on the debentures outstanding method over the life of the Sinking Fund Debentures Series B of the Corporation, which mature on July 15, 1995.

## CAPITALIZATION OF INTEREST

The Corporation follows the policy of capitalizing net interest costs during construction or development only on those projects for which funds have been borrowed; this would normally apply only to such major new projects from beginning of construction or development up to the commencement of commercial operations. In these cases interest earned on borrowed funds during the development and construction period is applied against the interest expense to reduce the amount of interest costs capitalized. Such net interest costs are capitalized because it is considered that they would not have been incurred if the project had not been undertaken and therefore are properly part of the capital cost of the total project.

## DEVELOPMENT PROJECTS AND EXPLORATION

Development projects are carried forward as assets while the projects are considered to be of value to the Corporation. All exploration expenses have been written off.

## INCOME AND MINING TAXES

The Corporation provides for deferred income and mining taxes on all significant timing differences which represent the tax effects of revenue and expense items reported for tax purposes in periods different than for accounting purposes.



# Rio Algom Limited (Incorporated under the laws of Ontario)

## Consolidated Statement of Financial Position

**DECEMBER 31, 1977**

(\$000's omitted)

|                                                                                                     | <u>1977</u>              | <u>1976</u>       |
|-----------------------------------------------------------------------------------------------------|--------------------------|-------------------|
| <b>CURRENT ASSETS:</b>                                                                              |                          |                   |
| Cash and short term deposits .....                                                                  | <b>\$ 110,936</b>        | \$ 134,127        |
| Receivables and prepaid expenses (note 5) .....                                                     | <b>75,232</b>            | 67,578            |
| Inventories and concentrates awaiting shipment (notes 2 and 5) .....                                | <b>142,009</b>           | 149,693           |
| Total .....                                                                                         | <b><u>328,177</u></b>    | <u>351,398</u>    |
| Less:                                                                                               |                          |                   |
| <b>CURRENT LIABILITIES:</b>                                                                         |                          |                   |
| Bank loans .....                                                                                    | <b>8,946</b>             | 2,295             |
| Accounts payable and accrued liabilities .....                                                      | <b>70,442</b>            | 60,544            |
| Income and mining taxes .....                                                                       | <b>13,250</b>            | 14,917            |
| Long term debt due within one year (note 5) .....                                                   | <b>7,680</b>             | - 12,340          |
| Total .....                                                                                         | <b><u>100,318</u></b>    | <u>90,096</u>     |
| <b>WORKING CAPITAL</b> .....                                                                        | <b>227,859</b>           | 261,302           |
| Plant and equipment, less depreciation (note 3) .....                                               | <b>291,373</b>           | 216,418           |
| Mining properties and preproduction expenditures, less amortization (note 4) .....                  | <b>42,849</b>            | 46,377            |
| Excess of acquisition cost over adjusted book value of Atlas Steels assets, less amortization ..... | <b>5,229</b>             | 6,866             |
| Debenture discount and financing expenses, less amortization .....                                  | <b>913</b>               | 987               |
| Investment in and advances to affiliated company, at cost (note 7) .....                            | <b>14,104</b>            | 8,073             |
| <b>TOTAL ASSETS LESS CURRENT LIABILITIES</b> .....                                                  | <b><u>582,327</u></b>    | <u>540,023</u>    |
| Deduct:                                                                                             |                          |                   |
| Long term debt (note 5) .....                                                                       | <b>121,993</b>           | 133,987           |
| Deferred income and mining taxes .....                                                              | <b>82,544</b>            | 57,038            |
| Minority shareholders' interests in subsidiary company .....                                        | <b>29,256</b>            | 27,250            |
|                                                                                                     | <b><u>233,793</u></b>    | <u>218,275</u>    |
| <b>EXCESS OF ASSETS OVER LIABILITIES</b> .....                                                      | <b><u>\$ 348,534</u></b> | <u>\$ 321,748</u> |
| <b>OWNERSHIP EVIDENCED BY:</b>                                                                      |                          |                   |
| Capital stock (note 6) .....                                                                        | <b>\$ 109,506</b>        | \$ 110,636        |
| Contributed surplus .....                                                                           | <b>20,085</b>            | 19,776            |
| Retained earnings .....                                                                             | <b>218,943</b>           | 191,336           |
| Total .....                                                                                         | <b><u>\$ 348,534</u></b> | <u>\$ 321,748</u> |

Approved on behalf of the Board:

G. C. GRAY, Director

R. D. ARMSTRONG, Director



## Consolidated Statement of Earnings

### YEAR ENDED DECEMBER 31, 1977

(\$000's omitted)

| REVENUE:                                                                      | 1977              | 1976              |
|-------------------------------------------------------------------------------|-------------------|-------------------|
| Revenue from mine production and sales of steel and other products .....      | <u>\$ 486,587</u> | <u>\$ 401,611</u> |
| EXPENSES:                                                                     |                   |                   |
| Cost of mine production and steel sales .....                                 | 332,843           | 271,624           |
| Selling, general and administration .....                                     | 39,397            | 36,031            |
| Interest (net) (note 12) .....                                                | (708)             | (2,405)           |
| Depreciation and amortization (note 13) .....                                 | 25,602            | 20,652            |
| Exploration .....                                                             | 6,391             | 6,827             |
|                                                                               | <u>403,525</u>    | <u>332,729</u>    |
|                                                                               | <u>83,062</u>     | <u>68,882</u>     |
| INCOME AND MINING TAXES:                                                      |                   |                   |
| Current .....                                                                 | 11,630            | 9,276             |
| Deferred .....                                                                | 26,065            | 22,650            |
|                                                                               | <u>37,695</u>     | <u>31,926</u>     |
| Earnings before adjustment for minority interests in subsidiary company ..... | 45,367            | 36,956            |
| Minority interests in net earnings of subsidiary .....                        | 2,552             | 5,327             |
| NET EARNINGS FOR THE YEAR .....                                               | <u>\$ 42,815</u>  | <u>\$ 31,629</u>  |
| EARNINGS PER COMMON SHARE .....                                               | <u>\$ 3.12</u>    | <u>\$ 2.29</u>    |

## Consolidated Statement of Retained Earnings

### YEAR ENDED DECEMBER 31, 1977

(\$000's omitted)

|                                                                                   | 1977              | 1976              |
|-----------------------------------------------------------------------------------|-------------------|-------------------|
| BALANCE, beginning of year .....                                                  | <u>\$ 191,336</u> | <u>\$ 173,888</u> |
| Add:                                                                              |                   |                   |
| Net earnings for the year .....                                                   | 42,815            | 31,629            |
|                                                                                   | <u>234,151</u>    | <u>205,517</u>    |
| Deduct:                                                                           |                   |                   |
| Dividends on preference shares .....                                              | 619               | 675               |
| Dividends on common shares at the rate of \$1.08 per share (\$1.00 in 1976) ..... | 14,589            | 13,506            |
|                                                                                   | <u>15,208</u>     | <u>14,181</u>     |
| BALANCE, end of year .....                                                        | <u>\$ 218,943</u> | <u>\$ 191,336</u> |



## Consolidated Statement of Contributed Surplus

### YEAR ENDED DECEMBER 31, 1977

(\$000's omitted)

|                                                                | 1977             | 1976             |
|----------------------------------------------------------------|------------------|------------------|
| BALANCE, beginning of year .....                               | \$ 19,776        | \$ 19,705        |
| Profit on purchase of preference shares for cancellation ..... | 309              | 71               |
| BALANCE, end of year .....                                     | <u>\$ 20,085</u> | <u>\$ 19,776</u> |

## Consolidated Statement of Changes in Financial Position

### YEAR ENDED DECEMBER 31, 1977

(\$000's omitted)

|                                                                                       |                   |                   |
|---------------------------------------------------------------------------------------|-------------------|-------------------|
| SOURCE OF FUNDS:                                                                      | 1977              | 1976              |
| Earnings before adjustment for minority interests in subsidiary company .....         | \$ 45,367         | \$ 36,956         |
| Add items included in earnings not involving current outlay of funds:                 |                   |                   |
| Depreciation, amortization and other charges (net) .....                              | 25,790            | 21,788            |
| Deferred income and mining taxes .....                                                | 26,065            | 22,650            |
| Funds provided by operations .....                                                    | 97,222            | 81,394            |
| Housing and other mortgages (net) .....                                               | 4,269             | 7,501             |
| Issue of common shares under stock option plan .....                                  | 75                | 452               |
| Bank loans of subsidiary .....                                                        | —                 | 68,183            |
|                                                                                       | <u>101,566</u>    | <u>157,530</u>    |
| DISPOSITION OF FUNDS:                                                                 |                   |                   |
| Expenditures (net) for plant and equipment, mining properties and preproduction ..... | 95,392            | 60,952            |
| Investment in and advances to affiliated company .....                                | 6,031             | 3,624             |
| Dividends on common shares .....                                                      | 14,589            | 13,506            |
| Dividends on preference shares .....                                                  | 619               | 675               |
| Purchase of minority shareholders' interests in subsidiary company .....              | 660               | 230               |
| Purchase of preference shares for cancellation .....                                  | 896               | 123               |
| Recoverable royalties .....                                                           | 559               | 1,955             |
| Reduction of long term debt:                                                          |                   |                   |
| Rio Algom Limited debentures .....                                                    | 2,626             | 6,081             |
| Bank loans of subsidiaries .....                                                      | 13,637            | 12,318            |
| 8½% Income Debentures of subsidiary and accrued interest .....                        | —                 | 12,530            |
|                                                                                       | <u>135,009</u>    | <u>111,994</u>    |
| INCREASE (DECREASE) IN WORKING CAPITAL .....                                          | (33,443)          | 45,536            |
| Working Capital, beginning of year .....                                              | 261,302           | 215,766           |
| Working Capital, end of year .....                                                    | <u>\$ 227,859</u> | <u>\$ 261,302</u> |



# Notes to Consolidated Financial Statements

DECEMBER 31, 1977

## 1. ACCOUNTING POLICIES

The information on page 19 presents a summary of certain accounting policies and is an integral part of these financial statements.

## 2. INVENTORIES AND CONCENTRATES AWAITING SHIPMENT

|                                                       | 1977                 | 1976                 |
|-------------------------------------------------------|----------------------|----------------------|
| Mining operations —                                   |                      |                      |
| Mine supplies .....                                   | \$ 17,581,223        | \$ 15,531,128        |
| Concentrates awaiting shipment .....                  | 35,276,226           | 53,652,578           |
|                                                       | <u>52,857,449</u>    | <u>69,183,706</u>    |
| Steel operations —                                    |                      |                      |
| Steel, other metals, raw materials and supplies ..... | 89,151,717           | 80,509,849           |
|                                                       | <u>\$142,009,166</u> | <u>\$149,693,555</u> |

## 3. PLANT AND EQUIPMENT

|                                         |                      |                      |
|-----------------------------------------|----------------------|----------------------|
| Buildings, at cost .....                | \$129,733,919        | \$ 94,165,590        |
| Machinery and equipment, at cost .....  | 260,873,405          | 227,095,309          |
|                                         | <u>390,607,324</u>   | <u>321,260,899</u>   |
| Less accumulated depreciation .....     | 198,554,509          | 179,438,526          |
|                                         | <u>192,052,815</u>   | <u>141,822,373</u>   |
| Construction in progress, at cost ..... | 97,551,455           | 72,837,873           |
| Land, at cost .....                     | 1,768,085            | 1,757,878            |
|                                         | <u>\$291,372,355</u> | <u>\$216,418,124</u> |

Plant and equipment includes \$56,817,970 in respect of assets of mines presently idle which have been fully depreciated.

## 4. MINING PROPERTIES AND PREPRODUCTION EXPENDITURES

|                                           | 1977                 | 1976                 |
|-------------------------------------------|----------------------|----------------------|
| Mining properties, at cost .....          | \$ 9,296,692         | \$ 9,275,491         |
| Less accumulated amortization .....       | 7,454,601            | 7,142,355            |
|                                           | <u>1,842,091</u>     | <u>2,133,136</u>     |
| Preproduction expenditures, at cost ..... | 125,111,783          | 124,563,876          |
| Less accumulated amortization .....       | 84,104,611           | 80,319,512           |
|                                           | <u>41,007,172</u>    | <u>44,244,364</u>    |
|                                           | <u>\$ 42,849,263</u> | <u>\$ 46,377,500</u> |



| 5. LONG TERM DEBT                                                    | 1977                 | 1976          |
|----------------------------------------------------------------------|----------------------|---------------|
| Rio Algom Limited Sinking Fund Debentures (a)                        |                      |               |
| — 6¾% Series A maturing on April 1, 1983 .....                       | <b>\$ 12,226,500</b> | \$ 14,852,500 |
| — 11½% Series B maturing on July 15, 1995 .....                      | <b>50,000,000</b>    | 50,000,000    |
| Lornex Mining Corporation Ltd.                                       |                      |               |
| — Bank loans due as stated hereunder (b) .....                       | <b>54,546,200</b>    | 68,182,750    |
| Less portion included in current liabilities (U.S.\$7,000,000) ..... | * <b>6,818,275</b>   | 6,818,275     |
| Long term portion (1977 — U.S.\$49,000,000; 1976 — U.S.\$63,000,000) | <b>47,727,925</b>    | 61,364,475    |
| Rio Algom Corporation bank loans .....                               | —                    | 5,220,000     |
| Less portion included in current liabilities .....                   | * —                  | 5,220,000     |
|                                                                      | —                    | —             |
| Housing and other mortgages payable (c) .....                        | <b>12,088,243</b>    | 7,819,738     |
| Less portion included in current liabilities .....                   | * <b>50,000</b>      | 50,000        |
|                                                                      | <b>12,038,243</b>    | 7,769,738     |
| Total long term debt .....                                           | <b>\$121,992,668</b> | \$133,986,713 |
| *Total long term debt due within one year .....                      | <b>\$ 6,868,275</b>  | \$ 12,088,275 |
| Add foreign exchange differential on U.S. \$7,000,000 .....          | <b>811,725</b>       | 251,725       |
| Total as shown on statement of financial position .....              | <b>\$ 7,680,000</b>  | \$ 12,340,000 |

- (a) The Corporation is required to make sinking fund payments for the retirement of the Sinking Fund Debentures in principal amounts as follows:

Series A — \$3,000,000 on October 1, 1978 to 1982 inclusive; and  
Series B — \$2,500,000 on July 15, 1981 to 1994 inclusive.

During the year \$2,626,000 principal amount of Series A debentures was purchased for cancellation; the 1978 requirement having been satisfied in prior years, \$1,852,500 was applied to totally satisfy the 1979 requirement and \$773,500 has been applied toward the 1980 requirement.

The Sinking Fund Debentures are secured under a trust deed by a first floating charge upon the property and assets, present and future, of the Corporation.

- (b) Repayment of the Lornex bank loans is secured by general assignments of the Lornex accounts and settlements receivable (\$13.3 million) and by registered assignments under Section 88 of the Bank Act of all Lornex concentrates awaiting shipment and Lornex mine supplies (\$23.2 million).

The interest rate on these loans varies with the base rate for United States dollar loans made in Canada; the December 31, 1977 rate payable by Lornex was 8½% per annum.

Under the terms of the bank loan agreement Lornex is required to repay, on February 15 and August 15 in each of the years 1978 to 1981 inclusive, a principal amount equal to the lesser of 75% of the available cash flow as defined or U.S.\$7,000,000; any balance of the loans is due August 15, 1981.

- (c) The housing and other mortgages payable generally carry interest rates varying from 10% to 11¾%.



## 6. CAPITAL STOCK

### Authorized:

453,435 First Preference Shares with a par value of \$100 each,  
issuable in series  
15,000,000 Common Shares without par value

### Issued:

|                                                                                                                                                                  | <u>1977</u>                 | <u>1976</u>                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------|
| 103,435 \$5.80 Cumulative Redeemable First Preference Shares<br>Series A (115,483 at December 31, 1976) (redeemable at<br>premiums ranging from 3¼% to 1%) ..... | <b>\$ 10,343,500</b>        | \$ 11,548,300               |
| 13,509,609 Common Shares (13,506,649 at December 31, 1976) .....                                                                                                 | <b>99,162,660</b>           | 99,087,930                  |
|                                                                                                                                                                  | <b><u>\$109,506,160</u></b> | <b><u>\$110,636,230</u></b> |

### (i) During the year:

- (a) 2,960 Common Shares were issued for \$74,730 cash under a Stock Option Plan; and
- (b) 12,048 First Preference Shares were purchased for cancellation; the Corporation's 1978 and 1979 obligations referred to in Note 7(c) below have been fulfilled.

- (ii) At December 31, 1977 65,688 Common Shares were reserved under a Stock Option Plan. Outstanding options have been granted to employees to purchase 40,435 Common Shares at prices varying from \$24.87 to \$28.35 per share; these options expire on varying dates from March 31, 1978 to April 13, 1983.

- (iii) There are restrictions on the payment of dividends in the provisions attaching to the Preference Shares and the Corporation's trust indentures relating to the Series A and Series B Debentures.

## 7. COMMITMENTS AND CONTINGENCIES

- (a) Estimated total cost to complete capital projects as at December 31, 1977 was approximately \$161,779,000 (committed \$19,031,000).
- (b) Minimum annual rentals upon real property with original lease terms extending beyond December 31, 1980 amounted to approximately \$961,000.
- (c) The Corporation is obligated on April 1 in each year to set aside \$300,000 as a retirement fund, to be used to purchase or redeem Preference Shares.
- (d) Unfunded liability for pension funds at December 31, 1977 was estimated at \$18,929,000. This is presently being funded over a period of 14 years as follows:
  - (i) \$2,541,000 per annum for 1978 and 1979,
  - (ii) \$1,926,000 per annum for 1980 and 1981,
  - (iii) \$1,803,000 per annum for 1982 to 1988,
  - (iv) \$1,589,000 per annum for 1989 and 1990, and
  - (v) \$291,000 for 1991.
- (e) In June, 1976 Rio Algom Corporation (a subsidiary of one of the Corporation's subsidiaries) was served with a subpoena in aid of an inquiry being carried on by a Grand Jury convened by the United States Department of Justice. The stated purpose of the inquiry is to investigate into the worldwide practices in uranium production and marketing. Rio Algom Corporation has responded to the subpoena. The Grand Jury inquiry is continuing.

Subsequently, in October, 1976, Westinghouse Electric Corporation commenced an action in the United States District Court for the Northern District of Illinois in which 29 defendants are named, including Rio Algom



Limited and Rio Algom Corporation. The complaint filed by Westinghouse alleges illegal combinations and conspiracies among the defendants to restrain both the interstate and foreign commerce of the United States in uranium in violation of the Sherman Antitrust and Wilson Tariff Acts, and is seeking to recover treble damages and to secure injunctive relief from each of the defendants. On the advice of counsel, Rio Algom Limited did not appear in the action and the resulting default has been noted on the court record. Rio Algom Corporation has filed an appearance in the action and will contest Westinghouse's complaint. That case is in the discovery stages of pretrial proceedings.

In November, 1977 thirteen companies, including Rio Algom Limited and Rio Algom Corporation, were made defendants in three separate, but similar, actions brought by Tennessee Valley Authority (TVA). In these actions, TVA alleges violations of the United States Sherman Antitrust Act, the Wilson Tariff Act and the Tennessee Valley Authority Act, and is seeking to recover treble damages and to secure injunctive relief from each of the defendants. TVA is also seeking a declaratory judgment to determine the defendants' liability. Rio Algom Limited will not appear in this litigation, but Rio Algom Corporation has appeared and will contest TVA's complaint.

- (f) The shares representing the Corporation's investment in an affiliated company have been pledged as security for debt owing by that affiliated company.
- (g) The Corporation has a contingent liability to buy back houses and mobile home lots at Lornex' Logan Lake townsite for \$5,692,541 until December 31, 1982.

#### 8. ANTI-INFLATION PROGRAM

Rio Algom and its Canadian operations are subject to and have complied with controls over prices, profit margins, compensation and dividends under the Federal Government Anti-Inflation Program.

#### 9. UNAUDITED QUARTERLY RESULTS

The quarterly revenue, gross profit, net earnings and earnings per share as previously reported in unaudited quarterly reports to shareholders are set forth in the following table (dollars in millions, except per share amounts):

| <u>1977</u>              | <u>1st Qtr.</u> | <u>2nd Qtr.</u> | <u>3rd Qtr.</u> | <u>4th Qtr.</u> | <u>YEAR</u> |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-------------|
| Revenue .....            | \$ 130.1        | \$ 123.6        | \$ 111.5        | \$ 121.4        | \$ 486.6    |
| Gross profit .....       | 48.5            | 37.8            | 33.0            | 34.4            | 153.7       |
| Net earnings .....       | 15.8            | 9.5             | 9.0             | 8.5             | 42.8        |
| Earnings per share ..... | 1.16            | 0.68            | 0.67            | 0.61            | 3.12        |
| <br><u>1976</u>          |                 |                 |                 |                 |             |
| Revenue .....            | \$ 95.5         | \$ 99.7         | \$ 104.8        | \$ 101.6        | \$ 401.6    |
| Gross profit .....       | 29.3            | 30.0            | 38.6            | 32.1            | 130.0       |
| Net earnings .....       | 7.4             | 9.0             | 7.9             | 7.3             | 31.6        |
| Earnings per share ..... | 0.53            | 0.65            | 0.58            | 0.53            | 2.29        |

#### 10. CONVERSION OF FOREIGN CURRENCIES

The Corporation's accounting policy for conversion to Canadian dollars of accounts in foreign currencies is in accordance with the United States Financial Accounting Standards Board Statement No. 8 with the exception of its requirement to translate long term debt at year-end exchange rates.



Long term debt includes bank loans of a subsidiary company, Lornex Mining Corporation Ltd., payable in U.S. dollars, amounting to U.S. \$49,000,000 which have been converted to Canadian dollars at the rate in effect at the time of the borrowing. Accordingly, the Corporation's earnings reported to shareholders will differ from that reflected in the Corporation's Form 10-K annual report for 1977 to the United States Securities and Exchange Commission. If the United States policy were followed the Corporation's earnings for 1977 would be reduced by \$2,634,000 during the year; the reduction in quarterly earnings would be as follows:

1st — \$1,770,000; 2nd — \$103,000; 3rd — \$513,000 and 4th — \$248,000.

#### 11. REMUNERATION OF DIRECTORS AND SENIOR OFFICERS

The aggregate direct remuneration paid or payable by the Corporation and its consolidated subsidiaries to the Directors and Senior Officers of the Corporation was \$973,142 in respect of the year ended December 31, 1977. In addition, amounts, charged to earnings in prior years in respect of discretionary deferred bonus awards, totalling \$209,670 became payable to those individuals during 1977.

#### 12. INTEREST (NET)

|                                     | 1977                | 1976                  |
|-------------------------------------|---------------------|-----------------------|
| Interest on demand bank loans ..... | \$ 646,391          | \$ 610,049            |
| Interest on long term debt .....    | 13,051,431          | 10,192,599            |
| Interest capitalized .....          | (4,292,000)         | (2,351,000)           |
| Investment and other income .....   | (10,113,806)        | (10,856,302)          |
|                                     | <u>\$ (707,984)</u> | <u>\$ (2,404,654)</u> |

#### 13. DEPRECIATION AND AMORTIZATION

This consists of the following provisions:

|                                                                                           | 1977                 | 1976                 |
|-------------------------------------------------------------------------------------------|----------------------|----------------------|
| Plant and equipment .....                                                                 | \$ 19,847,032        | \$ 15,975,805        |
| Mining properties and preproduction expenditures .....                                    | 4,097,445            | 3,580,148            |
| Excess of acquisition cost over adjusted book value of Atlas Steels assets acquired ..... | 1,657,818            | 1,096,196            |
|                                                                                           | <u>\$ 25,602,295</u> | <u>\$ 20,652,149</u> |

#### 14. ASSET REPLACEMENT COSTS (UNAUDITED)

The impact of inflation on the Corporation's production costs was generally greater than the corresponding change in the general price level. In its steel operations the Corporation has historically not been able to compensate for cost increases by increasing selling prices. In its mining operations selling prices are generally either increased by application of escalation formulae designed to compensate for unit cost increases, or are determined by reference to world commodity prices.

Due to inflation the replacement of plant and equipment with assets having equivalent productive capacity almost always requires a substantially greater capital investment than was required to purchase the assets which are being replaced.

The Corporation's annual report on Form 10-K (a copy of which is available upon request) contains certain specific information with respect to year-end replacement cost of inventories and productive capacity of its operations and the approximate effect which replacement cost would have had on the computation of depreciation expense for the year, as well as the steel operations' cost of sales.



# Auditors' Report to the Shareholders

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We have examined the consolidated statement of financial position of Rio Algom Limited as at December 31, 1977 and the consolidated statements of earnings, retained earnings, contributed surplus and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the company as at December 31, 1977 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada  
February 24, 1978

COOPERS & LYBRAND  
Chartered Accountants



# Supplementary Information

## Five Year Review

### Rio Algom Limited and Subsidiaries

(\$000's omitted)

|                                                          | <u>1977</u>       | <u>1976</u>      | <u>1975</u>      | <u>1974</u>      | <u>1973</u>      |
|----------------------------------------------------------|-------------------|------------------|------------------|------------------|------------------|
| Revenue .....                                            | <b>\$ 486,587</b> | \$ 401,611       | \$ 367,382       | \$ 390,571       | \$ 314,920       |
| Investment and other income .....                        | <b>10,114</b>     | 10,856           | 4,202            | 5,548            | 2,438            |
|                                                          | <b>496,701</b>    | 412,467          | 371,584          | 396,119          | 317,358          |
| Cost of mine production and steel sales .....            | <b>332,843</b>    | 271,624          | 239,401          | 227,732          | 178,354          |
| Selling, general and administration .....                | <b>39,397</b>     | 36,031           | 31,675           | 29,173           | 24,453           |
| Interest expense (note 2) .....                          | <b>9,406</b>      | 8,451            | 8,029            | 8,904            | 11,840           |
| Depreciation and amortization .....                      | <b>25,602</b>     | 20,652           | 20,419           | 20,958           | 20,853           |
| Exploration .....                                        | <b>6,391</b>      | 6,827            | 6,198            | 5,143            | 3,125            |
|                                                          | <b>413,639</b>    | 343,585          | 305,722          | 291,910          | 238,625          |
| Earnings before taxes and minority interests .....       | <b>83,062</b>     | 68,882           | 65,862           | 104,209          | 78,733           |
| Income and mining taxes .....                            | <b>37,695</b>     | 31,926           | 35,620           | 50,619           | 12,353           |
|                                                          | <b>45,367</b>     | 36,956           | 30,242           | 53,590           | 66,380           |
| Minority interests in net earnings of subsidiaries ..... | <b>2,552</b>      | 5,327            | 210              | 9,766            | 14,320           |
| Net earnings .....                                       | <b>\$ 42,815</b>  | <b>\$ 31,629</b> | <b>\$ 30,032</b> | <b>\$ 43,824</b> | <b>\$ 52,060</b> |
| PRODUCTION DATA                                          |                   |                  |                  |                  |                  |
| Uranium in concentrate (pounds—000's) .....              | <b>5,468</b>      | 5,534            | 5,806            | 6,194            | 6,166            |
| Copper in concentrate (pounds—000's) .....               | <b>141,111</b>    | 145,712          | 116,811          | 144,156          | 129,800          |
| Molybdenum in concentrate (pounds—000's) .....           | <b>3,795</b>      | 3,769            | 3,084            | 4,038            | 3,481            |
| Steel (tons—000's) .....                                 | <b>195</b>        | 161              | 161              | 189              | 182              |
| FINANCIAL DATA                                           |                   |                  |                  |                  |                  |
| Per share of common stock                                |                   |                  |                  |                  |                  |
| — Net earnings .....                                     | <b>\$ 3.12</b>    | \$ 2.29          | \$ 2.28          | \$ 3.52          | \$ 4.19          |
| — Dividends .....                                        | <b>1.08</b>       | 1.00             | 1.00             | 1.00             | 70¢              |
| — Equity .....                                           | <b>25.03</b>      | 22.97            | 21.66            | 20.45            | 17.92            |
| Long term debt (000's) .....                             | <b>\$ 121,993</b> | \$ 133,987       | \$ 88,468        | \$ 63,125        | \$ 81,970        |
| Shareholders' equity (000's) .....                       | <b>\$ 348,534</b> | \$ 321,748       | \$ 303,971       | \$ 262,796       | \$ 232,409       |
| Common shares outstanding (000's) .....                  | <b>13,510</b>     | 13,507           | 13,490           | 12,261           | 12,259           |
| Capital expenditures (000's) .....                       | <b>\$ 95,392</b>  | \$ 60,952        | \$ 29,504        | \$ 14,261        | \$ 9,251         |
| Number of shareholders .....                             | <b>11,300</b>     | 11,800           | 12,700           | 13,000           | 13,500           |
| Number of employees .....                                | <b>5,922</b>      | 5,544            | 5,144            | 5,362            | 5,450            |

Notes:

- (1) The Poirier copper mine ceased operations June 27, 1975.
- (2) The amounts shown above for interest expense for 1977, 1976 and 1975 do not include interest capitalized in the amounts of \$4,292,000, \$2,351,000 and \$930,000, respectively.



## Business Segment Data

The operations of the Corporation and its subsidiaries may be grouped into segments. The primary operations of each segment are as follows:

| <u>Business Segment</u> | <u>Operations</u>                                                                                         |
|-------------------------|-----------------------------------------------------------------------------------------------------------|
| Uranium                 | Underground mining and milling of uranium ore and sale of uranium concentrates.                           |
| Copper                  | Open pit mining and milling of copper and molybdenum ore and sale of concentrates.                        |
| Steel                   | Manufacture and/or distribution of stainless steels, machinery and other steels and other metal products. |

Revenue from mine production and sales of steel and other products, by segment, are as follows (all are to unaffiliated customers):

|                                                     | <u>Year Ended December 31,</u> |                  |                  |                  |                  |
|-----------------------------------------------------|--------------------------------|------------------|------------------|------------------|------------------|
|                                                     | <u>1977</u>                    | <u>1976</u>      | <u>1975</u>      | <u>1974</u>      | <u>1973</u>      |
|                                                     | (in thousands)                 |                  |                  |                  |                  |
| — Uranium .....                                     | <b>\$ 132,008</b>              | \$ 93,326        | \$ 93,416        | \$ 68,232        | \$ 53,887        |
| — Copper .....                                      | <b>75,449</b>                  | 82,940           | 55,378           | 96,586           | 97,641           |
| — Steel .....                                       | <b>279,130</b>                 | 225,345          | 218,588          | 225,753          | 163,392          |
| Consolidated .....                                  | <b>\$ 486,587</b>              | <b>\$401,611</b> | <b>\$367,382</b> | <b>\$390,571</b> | <b>\$314,920</b> |
| The operating profit of each segment is as follows: |                                |                  |                  |                  |                  |
| — Uranium .....                                     | <b>\$ 58,107</b>               | \$ 37,270        | \$ 49,215        | \$ 35,547        | \$ 25,505        |
| — Copper .....                                      | <b>19,281</b>                  | 34,906           | 13,814           | 45,900           | 55,896           |
| — Steel .....                                       | <b>17,733</b>                  | 7,192            | 19,270           | 36,431           | 14,208           |
|                                                     | <b>95,121</b>                  | 79,368           | 82,299           | 117,878          | 95,609           |
| Deduct:                                             |                                |                  |                  |                  |                  |
| Exploration .....                                   | <b>6,391</b>                   | 6,827            | 6,198            | 5,143            | 3,125            |
| Corporate expenses .....                            | <b>6,376</b>                   | 6,064            | 6,412            | 5,170            | 4,349            |
| Interest (net) .....                                | <b>(708)</b>                   | (2,405)          | 3,827            | 3,356            | 9,402            |
|                                                     | <b>12,059</b>                  | 10,486           | 16,437           | 13,669           | 16,876           |
| Earnings before taxes and minority interests .....  | <b>\$ 83,062</b>               | <b>\$ 68,882</b> | <b>\$ 65,862</b> | <b>\$104,209</b> | <b>\$ 78,733</b> |

During the last five years the following products contributed the percentages of consolidated revenue shown:

|                        | <u>1977</u> | <u>1976</u> | <u>1975</u> | <u>1974</u> | <u>1973</u> |
|------------------------|-------------|-------------|-------------|-------------|-------------|
| Uranium .....          | 27%         | 23%         | 25%         | 17%         | 17%         |
| Copper .....           | 16          | 21          | 15          | 25          | 31          |
| Stainless steels ..... | 28          | 26          | 27          | 30          | 24          |
| Machinery steels ..... | 11          | 8           | 12          | 10          | 9           |
| Other products .....   | 18          | 22          | 21          | 18          | 19          |
|                        | <u>100%</u> | <u>100%</u> | <u>100%</u> | <u>100%</u> | <u>100%</u> |

Operating profit is revenue less applicable operating expenses. In computing operating profit none of the following items have been deducted: exploration, general corporate expenses, interest expense (net of investment and other income) and minority interests in net earnings of subsidiaries.



Identifiable assets of each segment are as follows:

|                                | December 31       |           |           |           |           |
|--------------------------------|-------------------|-----------|-----------|-----------|-----------|
|                                | 1977              | 1976      | 1975      | 1974      | 1973      |
|                                | (in thousands)    |           |           |           |           |
| Uranium .....                  | <b>\$ 171,295</b> | \$116,572 | \$115,644 | \$ 98,770 | \$ 87,153 |
| Copper .....                   | <b>188,504</b>    | 189,875   | 172,817   | 173,645   | 173,274   |
| Steel .....                    | <b>212,630</b>    | 200,147   | 180,392   | 178,931   | 143,295   |
| Identifiable assets .....      | <b>572,429</b>    | 506,594   | 468,853   | 451,346   | 403,722   |
| General corporate assets ..... | <b>110,216</b>    | 123,525   | 72,262    | 20,965    | 12,898    |
| Total assets .....             | <b>\$ 682,645</b> | \$630,119 | \$541,115 | \$472,311 | \$416,620 |

Identifiable assets by segment are those assets that are used in the operations of each segment. General corporate assets are principally cash and short term deposits and investment in and advances to an affiliated company.

Depreciation, depletion and amortization expense of each segment is as follows:

|                                                                | Year Ended December 31, |           |
|----------------------------------------------------------------|-------------------------|-----------|
|                                                                | 1977                    | 1976      |
|                                                                | (In thousands)          |           |
| Uranium .....                                                  | <b>\$ 7,505</b>         | \$ 5,679  |
| Copper .....                                                   | <b>8,816</b>            | 7,662     |
| Steel .....                                                    | <b>9,190</b>            | 7,222     |
| Segment depreciation, depletion and amortization expense ..... | <b>25,511</b>           | 20,563    |
| General corporate .....                                        | <b>91</b>               | 89        |
| Total depreciation, depletion and amortization expense .....   | <b>\$25,602</b>         | \$ 20,652 |

Net capital expenditures of each segment including capitalized interest are as follows:

|                                              | Year Ended December 31, |           |
|----------------------------------------------|-------------------------|-----------|
|                                              | 1977                    | 1976      |
|                                              | (In thousands)          |           |
| Uranium .....                                | <b>\$ 71,483</b>        | \$ 28,707 |
| Copper .....                                 | <b>18,584</b>           | 17,115    |
| Steel .....                                  | <b>5,213</b>            | 14,974    |
| Segment capital expenditures .....           | <b>95,280</b>           | 60,796    |
| General corporate capital expenditures ..... | <b>112</b>              | 156       |
| Total capital expenditures (net) .....       | <b>\$ 95,392</b>        | \$ 60,952 |

The Corporation's foreign operations are conducted by subsidiaries in four countries; domestic divisions make export sales in various parts of the world. Details of foreign and domestic revenue are as follows:

|                                                                                       | Year Ended December 31, |            |
|---------------------------------------------------------------------------------------|-------------------------|------------|
|                                                                                       | 1977                    | 1976       |
|                                                                                       | (In thousands)          |            |
| Domestic operations (Canada) (A) .....                                                | <b>\$417,898</b>        | \$ 353,101 |
| Foreign operations — United States of America, Australia, United Kingdom and Mexico . | <b>68,689</b>           | 48,510     |
| Consolidated revenue .....                                                            | <b>\$486,587</b>        | \$ 401,611 |



A — Includes export revenue of approximately \$185,874,000 and \$144,345,000 in 1977 and 1976, respectively, as follows:

|                       | <u>1977</u>      | <u>1976</u>       |
|-----------------------|------------------|-------------------|
|                       | (In thousands)   |                   |
| Japan .....           | \$ 80,545        | \$ 74,405         |
| United States .....   | 28,204           | 32,441            |
| United Kingdom .....  | 61,149           | 25,662            |
| Other countries ..... | 15,976           | 11,837            |
|                       | <u>\$185,874</u> | <u>\$ 144,345</u> |

— Does not include revenue from inter-company sales of \$14,926,000 in 1977 and \$9,721,000 in 1976.

Operating profit by domestic and foreign operations is as follows:

|                                    | <u>Year Ended December 31,</u> |                  |
|------------------------------------|--------------------------------|------------------|
|                                    | <u>1977</u>                    | <u>1976</u>      |
|                                    | (In thousands)                 |                  |
| Domestic (Canada) .....            | \$ 85,385                      | \$ 76,728        |
| Foreign .....                      | 9,736                          | 2,640            |
| Operating profit of segments ..... | <u>\$ 95,121</u>               | <u>\$ 79,368</u> |

Identifiable assets of the Corporation's foreign operations totalled \$52,569,000 and \$41,647,000 at December 31, 1977 and 1976, respectively.



## Management Discussion and Analysis

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In total, earnings before taxes and minority interests in 1974 increased by \$25,476,000. At the operating profit level there was an increase of \$22,269,000; steel operating profit increased by \$22,223,000 and uranium by \$10,042,000 while copper operating profit decreased by \$9,996,000. Steel profits improved mainly due to increased volume, improved product mix and higher selling prices. Uranium profits increased because of escalation in selling prices. Copper profits declined because of lower prices and higher expenses, partly offset by increased production. The improvements in operating profits were more than offset by an increase of \$38,266,000 in income and mining taxes, partly due to increased earnings before taxes; these taxes were proportionately much higher in 1974 primarily because of higher provision by Rio Algom for income tax, provision by Lornex for British Columbia government royalty effective January 1, 1974, the expiry of the Lornex tax exempt period on December 31, 1973, the introduction of increased Ontario mining taxes effective April 9, 1974, and the disallowance, for federal tax purposes, of provincial mining taxes and royalties effective May 6, 1974.

In 1975 earnings before taxes and minority interests declined by \$38,347,000. At the operating profit level there was a decrease of \$35,579,000; copper operating profit was lower by \$32,086,000 and steel profits declined by \$17,161,000, partly offset by an increase of \$13,668,000 in uranium profits. Copper earnings declined because of lower copper prices and a reduction in operating level at Lornex resulting from the depressed world-wide demand for copper; in addition the Poirier mine ceased operations June 27, 1975. In the steel operations the deterioration in market conditions which had begun to manifest itself in the latter part of 1974 continued and accelerated in 1975. The increase in uranium profits was attributable in part to two spot sales of uranium oxide of one million pounds each entered into during 1975 at then prevailing market prices. The net decline in pre-tax earnings was offset somewhat by reductions of \$14,999,000 and \$9,556,000 in the provisions for income and mining taxes and the minority shareholders' interests in the net earnings of Lornex, respectively.

In 1976 earnings before taxes and minority interests increased by \$3,020,000. Operating profits declined by \$2,931,000, consisting of decreases of approximately \$12,000,000 each in steel and uranium offset by a \$21,000,000 increase in copper. The increase in copper profits was due to an increase in copper production and slightly higher average copper prices at Lornex which was 66.5% owned by Rio Algom. Uranium profits were significantly lower since price escalation formulae in long term contracts and renegotiation of some contract prices were not sufficient to offset somewhat lower grades and substantially higher mine operating costs. In addition, 1975 earnings had benefitted from two spot sales of uranium oxide at then prevailing market prices. In the steel operations there was a substantial deterioration in earnings caused by depressed market conditions, a weaker product mix, reduced profit margins due to competitive pressures, a nine week strike at the Atlas Steels' Tracy plant and higher operating expenses; steel earnings were also affected adversely by deterioration in the values of currencies in Mexico, Australia and the United Kingdom. Investment and other income was higher in 1976 because of a greatly improved cash position, higher interest rates earned on funds invested in 1976 and the inclusion of the \$1.5 million gain realized on the sale of the plant and equipment of the Mines de Poirier copper mine during the second quarter of 1976. Income and mining tax provisions were \$3,694,000 lower in 1976 mainly because of lower earnings in the steel and uranium mining operations. Minority interests in profits of subsidiaries increased by \$5,117,000 in 1976 due to the improved net earnings of Lornex.

Earnings before taxes and minority interests were \$14,180,000 higher in 1977. Operating profits were \$15,753,000 higher in 1977, comprised of increases of \$20,837,000 in uranium and \$10,541,000 in steel offset by a decrease of \$15,625,000 in copper profits. Uranium earnings increased primarily because of renegotiation of export contract prices; a significant portion of the increase related to 1976 production. Steel profits were higher at the Tracy plant of Atlas Steels and in the metal service centres of Atlas Alloys. There were marked improvements in operating efficiencies in 1977 at the Tracy plant where the 1976 results had been depressed by a nine week strike and weak markets; the metal service centres recorded higher sales volumes and modest increases in margins in 1977. Copper profits were lower than in 1976 primarily because of lower copper prices; expenses were higher as a result of escalation in operating costs and increased waste removal in the open pit mining operation. Income and mining tax provisions were \$5,769,000 higher in 1977 because of higher profits in uranium and steel. Minority interests in net earnings of subsidiaries declined by \$2,775,000 in 1977 due to lower copper earnings at Lornex, 67.2% of which is owned by Rio Algom.

## Price Range of Common Shares and Dividends Paid

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The following table shows the high and low prices for Rio Algom Common Shares on The Toronto Stock Exchange and dividends paid on these shares by the Corporation.

|                      | 1977              | 1976              |                                                                                                                             |
|----------------------|-------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------|
| First Quarter .....  | \$28 6/8 – 25 4/8 | \$36 2/8 – 28 4/8 | Dividends paid per share:<br>June 29, 1977 – 54¢; December 29, 1977 – 54¢.<br>June 29, 1976 – 50¢; December 30, 1976 – 50¢. |
| Second Quarter ..... | 29 6/8 – 27       | 35 – 31           |                                                                                                                             |
| Third Quarter .....  | 29 2/8 – 22 5/8   | 36 4/8 – 32 2/8   |                                                                                                                             |
| Fourth Quarter ..... | 27 3/8 – 22 5/8   | 32 7/8 – 26       |                                                                                                                             |



## **RIO ALGOM OPERATIONS**

### **Canada**

#### **MINING**

Head Office — Toronto, Ontario

Uranium Operations —

New Quirke mine at Elliot Lake, Ontario

Copper Operations

Lornex Mining Corporation Ltd., Vancouver, B.C.

Lornex mine at Logan Lake, B.C.

#### **EXPLORATION**

Rio Tinto Canadian Exploration Limited (Riocanex)

Head Office — Toronto, Ontario

Branch and Field Offices at Vancouver, B.C.  
and Fredericton, N.B.

#### **STEEL**

Atlas Steels

Head Office — Welland, Ontario

Plants at Welland, Ontario and Tracy, Quebec

#### **METAL DISTRIBUTION**

Atlas Alloys

Head Office — Etobicoke, Ontario

Service Centres at Etobicoke, Montreal, Windsor,  
Sarnia, Sudbury, Thunder Bay,  
Winnipeg, Edmonton, Vancouver and  
Prince George

### **United States**

#### **MINING**

Rio Algom Corporation

Registered Office — Wilmington, Delaware

Uranium Operations —

Lisbon mine at Moab, Utah

#### **EXPLORATION**

Rioamex, Division of Rio Algom Corporation,

Lakewood, Colorado and Spokane, Washington

#### **METAL DISTRIBUTION**

Atlas Alloys Inc.

Head Office — Cleveland, Ohio

Service Centres at Valley View, Ohio,  
Detroit, Michigan and K. C. Glader Co.,  
Chicago, Illinois

### **Overseas**

#### **METAL DISTRIBUTION**

Atlas Alloys Limited, Dunstable, Beds., England

Atlas Steels (Australia) Pty. Limited, Melbourne,  
Australia

Aceromex-Atlas S.A., Mexico City, Mexico

Agents or Distributors in other countries

## **MISCELLANEOUS CORPORATE INFORMATION**

### **Head Office**

120 Adelaide Street West, Toronto, Ontario, Canada  
M5H 1W5

### **Auditors**

Coopers & Lybrand, Chartered Accountants, Toronto

### **Registrars and Transfer Agents**

#### **Common Shares**

Canada Permanent Trust Company,  
Toronto, Montreal, Winnipeg, Regina, Calgary  
and Vancouver

The Canadian Bank of Commerce Trust  
Company, New York

#### **Preference Shares**

Canada Permanent Trust Company,  
Toronto, Montreal, Halifax, Winnipeg  
and Vancouver

### **Shares Listed**

#### **Common Shares**

Toronto Stock Exchange, Toronto  
Montreal Stock Exchange, Montreal  
American Stock Exchange, New York

#### **Preference Shares**

Toronto Stock Exchange, Toronto  
Montreal Stock Exchange, Montreal

### **Form 10-K Annual Report**

The Corporation's Form 10-K annual report for 1977  
to the United States Securities and Exchange  
Commission will be available on written  
request to the Secretary of the Corporation.



## Directors

D. S. Affleck (2)  
*Partner, Fasken & Calvin, Toronto*

\*G. R. Albino  
*President and Chief Operating Officer  
of the Corporation, Toronto*

W. A. Arbuckle (2)  
*Chairman, Celanese Canada Limited,  
Manufacturers of chemicals and fibres, Montreal*

\*R. D. Armstrong  
*Chairman and Chief Executive Officer  
of the Corporation, Toronto*

†J. Ian Crookston  
*Deputy Chairman, Nesbitt Thomson and Company  
Limited, Investment Dealers, Toronto*

P. H. Dean  
*An Executive Director, The Rio Tinto-Zinc  
Corporation Limited (1), London, England*

J. G. Edison, QC  
*Counsel to Aird & Berlis,  
Barristers & Solicitors, Toronto*

\*†G. C. Gray  
*President, A. E. LePage Limited, Realtors, Toronto*

\*Sam Harris  
*Senior Partner, Fried, Frank, Harris, Shriver &  
Jacobson, Attorneys-at-Law, New York, U.S.A.*

L. A. Lapointe, QC  
*Corporate Director, Montreal*

W. Moodie  
*President, Canadian Pacific Investments Limited,  
an investment company, Montreal*

\*†J. Herbert Smith  
*Consulting Engineer, Toronto*

\*Sir Mark Turner  
*Chairman and Chief Executive, The Rio Tinto-Zinc  
Corporation Limited (1), London, England*

R. J. Turner  
*President and Chief Executive Officer,  
Genstar Limited, a diversified Canadian  
company, Montreal*

R. W. Wright, CBE  
*Director, The Rio Tinto-Zinc Corporation Limited (1),  
London, England*

\*Members of the Executive Committee

†Members of the Audit Committee

(1) The parent of an international group of  
mining and industrial companies

(2) Not standing for re-election

## Officers

### EXECUTIVE

R. D. Armstrong  
*Chairman and Chief Executive Officer*

G. R. Albino  
*President and Chief Operating Officer*

### CORPORATE

R. G. Connochie  
*Vice-President, Planning*

J. G. Littlejohn  
*General Counsel*

A. F. Lowell  
*Vice-President, Minerals Marketing*

H. A. Pakrul  
*Vice-President, Controller*

A. C. Turner  
*Vice-President, Secretary*

J. Van Netten  
*Vice-President, Treasurer*

### MINING

E. W. Cheeseman  
*Vice-President, Underground Mining Operations*

P. A. Carlross  
*Vice-President, General Manager, Elliot Lake*

P. M. Kavanagh  
*Vice-President, Exploration*

J. E. Moyle  
*Vice-President, Mining Engineering*

### ATLAS STEELS

A. V. Orr  
*Vice-President, General Manager*

H. L. Brien  
*Vice-President, Engineering*

C. E. Ohlson  
*Vice-President, Sales and Marketing*

F. S. Robinson  
*Vice-President, Purchasing and Traffic*

D. V. Roland  
*Vice-President, Export Sales*

G. L. Sandler  
*Vice-President, Finance*

### ATLAS ALLOYS

W. D. Dobbin  
*Vice-President, General Manager*

K. Collyer  
*Vice-President, Canadian Operations*

J. B. Dunn  
*Vice-President, Controller*



**Rio Algom**  
Limited











# **Rio Algom Limited**

## **Interim Report to the Shareholders**

*For the six months ended June 30, 1977*

## TO THE SHAREHOLDERS:

Consolidated net earnings for the first six months of 1977 were \$25,244,000 compared to \$16,355,000 for the same period in 1976. The comparative net earnings per common share were \$1.84 and \$1.18 respectively. The earnings per common share are calculated after providing for dividends on first preference shares and are based on the average number of common shares outstanding during the respective periods (1977 — 13,507,342 shares; 1976 — 13,500,166 shares).

Most of the increase in consolidated net earnings occurred in the first quarter of 1977 and was due largely to higher earnings from the Company's uranium operations resulting from renegotiation of export contract prices. Since a significant part of the first quarter increase in uranium earnings was of a non-recurring nature they will not be maintained at the current high level for the balance of 1977. Uranium production was about the same in both years.

With regard to the Company's Lornex copper-molybdenum mine, 66.9% owned by Rio Algom, earnings for the first six months of 1977 were lower than last year, primarily because of lower copper prices and higher expenses. Copper production was higher this year but revenue was down slightly because of lower copper prices.

Revenue and earnings were higher in the Company's steel operations. Volume has improved in some areas although price levels in some product lines have not increased commensurate with cost increases. Also last year's results had been adversely affected by a strike at the Tracy plant of Atlas Steels. At Atlas' Welland plant the effects of an increase in sales volume were offset in part by run-in costs experienced at the new melt shop and a continuing cost price squeeze.

Construction at the Elliot Lake operations to expand the capacity of the Quirke mill from 4,500 tons per day to 7,000 tons per day is proceeding essentially on time and within budget. In addition work has commenced on reactivation of the Panel mine to bring it into production with a capacity of 3,300 tons per day at a cost which is estimated to be \$134 million.



As previously reported governmental approvals of the export of uranium from Canada are not presently being issued for exports to our overseas customers due to the fact that new safeguards agreements have not yet been reached by Canada with the European Economic Community and with Japan. Arrangements have been made on shipments originally scheduled for the first half of this year with customers involved for the uranium to be stored in Canada and paid for when placed in storage.

Appended to this report is the text of a press release regarding drill results obtained on a property being explored near Port Aux Basques, Newfoundland.

**R. D. ARMSTRONG**  
Chairman and  
Chief Executive Officer

**G. R. ALBINO**  
President and  
Chief Operating Officer

Toronto, Canada  
July 28, 1977

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## CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION

*for the six months ended June 30, 1977*  
*(\$000's omitted)*

|                                                                                       | 1977              | 1976              |
|---------------------------------------------------------------------------------------|-------------------|-------------------|
| <b>Source of Funds:</b>                                                               |                   |                   |
| Earnings before adjustment for<br>minority interests in<br>subsidiary company         | \$ 27,388         | \$ 19,122         |
| Add items included in earnings<br>not involving current outlay<br>of funds:           |                   |                   |
| Depreciation, amortization and<br>other charges (net)                                 | 12,378            | 11,047            |
| Deferred income and mining<br>taxes                                                   | 16,675            | 11,850            |
| Funds provided by operations                                                          | 56,441            | 42,019            |
| Housing and other mortgages (net)                                                     | 1,597             | 3,592             |
| Issue of common shares under<br>stock option plan                                     | 75                | 402               |
| Bank loan of subsidiary                                                               | —                 | 1,934             |
|                                                                                       | <u>58,113</u>     | <u>47,947</u>     |
| <b>Disposition of Funds:</b>                                                          |                   |                   |
| Expenditures (net) for plant and<br>equipment, mining properties<br>and preproduction | 36,272            | 17,782            |
| Dividends on common shares                                                            | 7,294             | 6,752             |
| Dividends on preference shares                                                        | 330               | 340               |
| Purchase of minority shareholders'<br>interest in subsidiary company                  | 302               | —                 |
| Purchase of preference shares for<br>cancellation                                     | 838               | 6                 |
| Royalties recoverable                                                                 | —                 | 1,309             |
| Investment in affiliated company                                                      | —                 | 917               |
| Reduction of long term debt:                                                          |                   |                   |
| Rio Algom Limited debentures                                                          | 2,416             | 1,936             |
| Bank loans of subsidiary                                                              | 6,818             | 625               |
|                                                                                       | <u>54,270</u>     | <u>29,667</u>     |
| Increase in Working Capital                                                           | 3,843             | 18,280            |
| Working Capital, beginning<br>of period                                               | 261,302           | 215,766           |
| Working Capital, end of period                                                        | <u>\$ 265,145</u> | <u>\$ 234,046</u> |



# RIO ALGOM LIMITED

## CONSOLIDATED STATEMENT OF EARNINGS

(\$000's omitted)

|                                                                            | Three Months Ended<br>June 30, |                 | Six Months Ended<br>June 30, |                  |
|----------------------------------------------------------------------------|--------------------------------|-----------------|------------------------------|------------------|
|                                                                            | 1977                           | 1976            | 1977                         | 1976             |
| <b>Revenue:</b>                                                            |                                |                 |                              |                  |
| Revenue from mine production and sales of<br>steel and other products      | \$ 123,634                     | \$ 99,710       | \$ 253,716                   | \$ 195,207       |
| <b>Expenses:</b>                                                           |                                |                 |                              |                  |
| Cost of mine production and steel sales                                    | 85,830                         | 69,693          | 167,366                      | 135,918          |
| Selling, general and administration                                        | 9,774                          | 8,186           | 19,538                       | 15,859           |
| Interest (net) (note)                                                      | (461)                          | (1,733)         | (22)                         | (1,571)          |
| Depreciation and amortization                                              | 6,162                          | 5,340           | 12,339                       | 10,497           |
| Exploration                                                                | 1,895                          | 1,928           | 2,857                        | 3,050            |
|                                                                            | <u>103,200</u>                 | <u>83,414</u>   | <u>202,078</u>               | <u>163,753</u>   |
| Earnings before taxes and minority interest                                | 20,434                         | 16,296          | 51,638                       | 31,454           |
| Income and mining taxes                                                    | <u>10,391</u>                  | <u>5,330</u>    | <u>24,250</u>                | <u>12,332</u>    |
| Earnings before adjustment for minority<br>interests in subsidiary company | 10,043                         | 10,966          | 27,388                       | 19,122           |
| Minority interests in profits of subsidiary                                | <u>569</u>                     | <u>1,995</u>    | <u>2,144</u>                 | <u>2,767</u>     |
| Net earnings for the period                                                | <u>\$ 9,474</u>                | <u>\$ 8,971</u> | <u>\$ 25,244</u>             | <u>\$ 16,355</u> |
| Earnings per common share                                                  | <u>\$ 0.68</u>                 | <u>\$ 0.65</u>  | <u>\$ 1.84</u>               | <u>\$ 1.18</u>   |

### Note:

Interest (net) consists of:

|                               |                 |                   |                |                   |
|-------------------------------|-----------------|-------------------|----------------|-------------------|
| Interest on demand bank loans | \$ 151          | \$ 139            | \$ 296         | \$ 245            |
| Interest on long term debt    | 3,251           | 2,289             | 6,530          | 4,646             |
| Interest capitalized          | (795)           | (567)             | (1,353)        | (1,087)           |
| Investment and other income   | <u>(3,068)</u>  | <u>(3,594)</u>    | <u>(5,495)</u> | <u>(5,375)</u>    |
|                               | <u>\$ (461)</u> | <u>\$ (1,733)</u> | <u>\$ (22)</u> | <u>\$ (1,571)</u> |

Approved on behalf of the Board:

R.D. Armstrong, Director

G.R. Albino, Director

Subject to year end audit and adjustments.